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SUMMARY OF CONFERENCE AND CONCLUSIONS AND RECOMMENDATIONS ON INTERSTATE AIR POLLUTION, NATIONAL CAPITAL METROPOLITAN AREA

Department of Health, Education and Welfare
Washington, D. C.

December 1967

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Pursuant to section 105(c)(1)(C) of the Clean Air Act (42 U.S.C. 1857, et seq.), the Secretary of Health, Education, and Welfare called an Interstate Air Pollution Abatement Conference in the National Capital Metropolitan Area, comprising the District of Columbia; Montgomery and Prince Georges counties in the State of Maryland; and the cities of Alexandria, Falls Church and Fairfax, and Arlington, Fairfax, Loudoun, and Prince William counties in the State of Virginia. The conference was concerned with interstate air pollution originating in each of the two States and in the District of Columbia which was believed to endanger the health or welfare of persons in the National Capital metropolitan area.

The conference convened at the Sheraton Park Hotel, Washington, D. C. on December 11, 1967, and continued in session through December 19, 1967, at which time the Presiding Officer recessed the conference until January 3, 1968, when the conference was reconvened for announcement of findings and recommendations.

Mr. S. Smith Griswold of the Department of Health, Education, and Welfare served as Presiding Officer, and the following were official participants for their respective jurisdictions during the conference:

Mr. Richard W. Arey	Air Pollution Control Board, State of Virginia
Mr. James B. Coulter	Department of Health, State of Maryland
Dr. Murray Grant	Department of Public Health, District of Columbia
Mr. William H. Megonnell	U. S. Department of Health, Education, and Welfare

At the request of the non-Federal participants, the Metropolitan Washington Council of Governments, whose membership includes fifteen local governments of the area, participated in the conference and was represented by its Executive Director, Walter A. Scheiber.

Approximately 100 persons were involved in the conference proceedings, either at their own request or as participants, staff, or invitees of the official agencies. Appendix A is a list of participants who spoke for the record.

Official conference participants, after study and discussion of the presentations, unanimously concurred in findings and seven recommendations. The text of the findings and recommendations is presented as Appendix B.

CONFERENCE SUMMARY

A. Occurrence of air pollution subject to abatement under the Clean Air Act

Meteorological evidence demonstrated that pollutants discharged into the atmosphere in the District of Columbia, Virginia and Maryland are transported across their respective borders into neighboring jurisdictions subject only to the vagaries of wind and weather. It was further shown that in the National Capital metropolitan area topography allows free air movement across political boundaries because of the absence of significant natural or artificial obstructions.

That such discharges cause or contribute to interstate air pollution which endangers health or welfare was demonstrated by a number of experts in many fields.

Presentations by representatives of the Aircraft Owners and Pilots Association and the Air Transport Association of America showed that decreased visibility due to air pollution adversely affected airline operations, resulting in costly delays and, at times, hazardous flying conditions.

The Conference participants concurred that emissions from jet aircraft operations at National Airport contribute significantly to visible pollution in the National Capital metropolitan area, and found that greater use of airports which are available outside the central portion of the area would afford a means of dispersing such emissions. The National Center for Air Pollution Control, pursuant to section 211 (b) of the Clean Air Act, is conducting "a full and complete investigation and study of the feasibility and practicability of controlling emissions from jet and piston aircraft engines and of establishing national emission standards with respect thereto," and will report the results of such study together with recommendations based thereon on or before November 21, 1960.

Damage to vegetation caused by ozone, peroxyacetyl nitrate, and sulfur dioxide occurs throughout the National Capital metropolitan area. Comparison of vegetation grown under controlled conditions with similar vegetation grown under ambient air (non-controlled) conditions, demonstrated that air pollution causes extensive damage to ornamental plants, reducing their esthetic value and contributing to economic loss. Tests showed that growth of all varieties of vegetation exposed to the ambient air in the area was suppressed on an average of fifty percent below that of vegetation grown under controlled conditions.

Deterioration, damage and destruction of materials, including historical documents, rare works of art, monuments and buildings, was described by several persons. A Library of Congress representative discussed the deterioration of books and manuscripts by atmospheric pollution, and the Director of the National Gallery of Art Research Project at Mellon Institute of Carnegie-Mellon University described the permanent and irreparable damage air pollution causes to art masterpieces. A spokesman for the National Park Service described the costly maintenance problems encountered due to air pollution's affects on memorials and statues in the area.

Examples of the increased economic cost to the community were given by a spokesman from Cafritz Company, a real estate firm which owns properties at various locations throughout the metropolitan area. Among the adverse economic effects cited as being caused by increasing air pollution in the area was the installation of costly air filtration systems (the installation of filters in a single building costing as much as $19,000).

Broader economic impact on the National Capital metropolitan area was demonstrated in a study by Environmental Health and Safety Research Associates. This study, analyzing household costs caused by air pollution, was concerned solely with those effects generated by soiling due to suspended particulates. Particulate pollution alone was shown to increase household costs in the area by approximately $250 million per year. It was estimated that reduction of suspended particulates to a yearly average level of 65 micrograms per cubic meter would result in savings in household costs of $110 million yearly for the entire metropolitan area, an annual average family savings of $150.

Ernst and Ernst, an international firm of consulting accountants, through application of a computer program analysis of the overall impact of emission controls, determined the costs of achieving various air quality levels of sulfur oxides and suspended particulates in the National Capital metropolitan area. Estimated costs and pollutant-collection efficiencies were based on analyses of data which reflected actual control experience. It was concluded that reduction of average suspended particulate concentrations to 75 micrograms per cubic meter, in conjunction with a one-percent-sulfur fuel restriction, would cost approximately $13 million annually throughout the area.

Several local physicians, including the following, expressed deep concern about the current and potential adverse effects of air pollution on the health of persons in the area.

Dr. Yuill Black, Medical Society of the District of Columbia

Dr. Brian Blades, Lewis Saltz Professor of Surgery and Chairman, Department of Surgery, the George Washington University School of Medicine, and Chief of Surgery, George Washington University Hospital, Washington, D. C.

Dr. Eloise Kailin, Assistant Professor of Medicine, Howard University Medical School, and Fellow, American Academy of Allergy; Medical Society of the District of Columbia

Dr. Sol Katz, Professor of Medicine, Georgetown University School of Medicine, and Chief, Medical Service, Veterans Administration Hospital, Washington, D. C.

Dr. Harold I. Passes, Assistant Clinical Professor of Medicine, George Washington University School of Medicine, Member of the Board of Directors, Montgomery County Tuberculosis and Respiratory Disease Association, and the District of Columbia Thoracic Society

Dr. Edward S. Ray, Chief, Pulmonary Section, Medical College of Virginia, and President, Virginia Tuberculosis and Respiratory Disease Association

Significantly representative is the statement of Dr. Kailin, who appeared as a delegate to the conference from the Medical Society of the District of Columbia:

> "The Medical Society of the District of Columbia has taken formal notice of air pollution in this metropolitan area as a contributing cause to asthma, emphysema and cancer, as well as other kinds of illness. Doctors are concerned with the chronic disability that such conditions imply, as well as with the deaths that result from these air pollution aggravated illnesses.
>
> People who are affected in these ways are usually ill for years, and die often without any idea that air pollution was a very important factor in their own illness."

B. Adequacy of measures taken toward abatement of the pollution

Insufficient and inadequate action has been taken toward abatement of interstate air pollution in the National Capital metropolitan area.

Federal facilities emit 30 percent of the sulfur oxide and particulate air pollutants in the District of Columbia and ten percent of these air pollutants in the entire National Capital metropolitan area. Such emissions are subject to control under Executive Order 11282 and accompanying standards in 42 CFR Part 76. The Clean Air Act calls for Federal leadership in the prevention and control of air pollution; accordingly, the National Center for Air Pollution Control will report by August 1, 1968, and annually thereafter, to the District of Columbia, the State of Virginia and the State of Maryland air pollution control agencies, progress of measures taken toward abatement and control of air pollution from Federal facilities located in

their respective jurisdictions of the National Capital metropolitan area. The Regional Administrator of the General Services Administration, Mr. David Phillips, stated at the conference that coal with a sulfur content not exceeding 1 percent will be specified in that agency's procurement, beginning with the 1968-1969 heating season for all Federal facilities in the area, including the Central Heating Plant located adjacent to the U. S. Department of Agriculture building in the District of Columbia. Furthermore, the National Center for Air Pollution Control plans to establish a Motor Vehicle Compliance Field Laboratory in the Baltimore, Maryland, area and will encourage the inspection of Federally owned vehicles used on streets or highways of the National Capital metropolitan area, to ascertain continued effectiveness of air pollution control systems on such vehicles.

While specific air pollution problems in the area have been recognized for many years, and some agencies have taken commendable independent control actions, the interstate aspects of the problem have not been considered in adequate detail, and concerted area-wide approaches to prevention, abatement and control only recently have begun to receive attention.

There is no effective interstate regional mechanism with adequate authority to establish uniform air pollution control regulations and to assure coordinated enforcement against all pollution sources located within the area.

Following is the status of actions relating to the prevention, control and abatement of air pollution, which have been taken by various jurisdictions in the National Capital metropolitan area:

Under Maryland's 1967 Air Pollution Control Law, the State Health Department has created a Washington Metropolitan Area, composed of Montgomery and Prince Georges Counties. Moreover, subsequent to the convening of the National Capital Metropolitan Area Interstate Air Pollution Abatement Conference, the State adopted for this area uniform control regulations, which become effective May 20, 1968. Thus, while Montgomery and Prince Georges Counties have enacted independent control regulations, the Maryland portion of the National Capital area will have uniform requirements.

Within the Virginia portion of the National Capital metropolitan area, the City of Falls Church has adopted an air pollution control ordinance, and Fairfax and Arlington Counties enacted such ordinances since the National Capital Metropolitan Area Interstate Air Pollution Abatement Conference was convened; the City of Alexandria has only a smoke ordinance; the City of Fairfax, Loudoun County, and Prince William County have no air pollution control ordinances.

The Virginia State Air Pollution Control Board, created by the 1966 State Legislature, is authorized to establish, within any area of the State, local air pollution control districts comprising a city, or two or more cities or counties, or any combination or parts thereof. No area comprising the Virginia counties included in the National Capital metropolitan area similar to that created in Maryland has been established in Virginia. Unless the Board takes such action, it will be necessary for seven independent local jurisdictions to adopt and enforce consistent ordinances. The likelihood of such action is extremely doubtful, and it is even more doubtful that the programs would be consistent with others in the metropolitan area.

The District of Columbia has neither adequate air pollution control regulations nor adequate administrative structure for effective action in this field. While hearings have been held by the District Committees of the U. S. House of Representatives and the U. S. Senate on bills which could provide the necessary instruments to prevent, abate and control air pollution in the District of Columbia, no concrete action has yet been taken to overcome the present regulatory and administrative inadequacies.

The Metropolitan Washington Council of Governments has served as a coordinating and advisory agency in the development of a model air pollution control ordinance recommended for local adoption. The Council of Governments does not have any legal, legislative or enforcement authority in the field of air pollution control, and it is limited to making recommendations to its members. Promotion of uniformity of action in the National Capital area, solely upon the basis of voluntary cooperation, gives no assurance of effective results. Significant differences in smoke limitations and in fuel sulfur restrictions already are present in ordinances adopted by Montgomery County and Falls Church, although each follows the Council of Governments' model ordinance.

While the independent action of some agencies to cope with air pollution within their individual jurisdictions and the efforts of the Metropolitan Washington Council of Governments to coordinate State and local air pollution control activities are commendable, they have not, and it is doubtful that they will, individually or collectively, successfully reduce the problem of interstate air pollution in

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the National Capital metropolitan area to a point where health and welfare are not endangered.

C. Nature of delays being encountered in abating the pollution

Presently, there is no effective mechanism to insure the promulgation of uniform air pollution control regulations and the promotion of uniform enforcement in the National Capital metropolitan area. Consequently, such standards, regulations and enforcement measures as exist are neither uniform nor aimed at a common objective. The District of Columbia lacks adequate and effective legal authority and administrative organization to control air pollution within its own boundaries. Activities undertaken by some individual jurisdictions in Maryland and Virginia are designed to cope only with those aspects of the problem originating within their borders; and even if such actions were totally effective in a single jurisdiction, it still would be subject to air pollutants reaching it from other portions of the metropolitan area.

/

APPENDIX A

Agnew, Honorable Spiro T., Governor of Maryland

Agnew, Wallace B., President, Washington Board of Realtors

Arey, Richard W., Executive Secretary, Virginia State Air Pollution Control Board

Avery, George A., Chairman, Public Service Commission, District of Columbia

Babson, Frederick A., President, Metropolitan Washington Council of Governments

Ball, Donald, Transcontinental Gas Pipe Line Company

Barrington, Wiley, Mechanical Supervisor, Operations Division, Cafritz Company

Basaron, Suat, Chief, Electrical Design Division, Department of Highways and Traffic, District of Columbia

Baumgartner, Addison, Facilities Management Office, National Aeronautics and Space Administration

Becker, William B., Assistant Vice President of Operations, Air Transport Association of America

Berkness, I. Russell, Chairman, Technical Advisory Committee on Air Pollution, State of Virginia

Binnewies, Fred, Assistant Director for Operations, National Capital Region, National Park Service

Black, Dr. Yuill, Medical Society of the District of Columbia

Blades, Dr. Brian, Lewis Saltz Professor of Surgery and Chairman, Department of Surgery, the George Washington University School of Medicine, and Chief of Surgery, George Washington University Hospital, Washington, D.C.

Blondes, Honorable Leonard S., Maryland House of Delegates

Blowers, Honorable John R., Councilman, Falls Church, Virginia

Borchers, Doyle J., Chief, Legal Procedures Section, Abatement Program, U. S. Public Health Service

Brewster, Honorable Daniel B., U. S. Senator from the State of Maryland

Brown, Colonel John M., Division of Air Quality Control, Maryland State Department of Health

Broyhill, Honorable Joel T., U. S. Representative from the State of Virginia

Bruce, Mrs. John W., Jr., Housewife, Bethesda, Maryland

Burton, Ellison S., Ernst & Ernst

Cary, William H., Jr., Department of Public Health, District of Columbia

Clark, David S., Trustee, Committee of One Hundred of the Federal City

Coston, Honorable Dean, Deputy Under Secretary, U. S. Department of Health, Education, and Welfare

Couchman, Charles E., Chief, Air Pollution Division, Bureau of Public Health Engineering, District of Columbia Department of Public Health

Coughlin, John J., Deputy Director, Administrative Services, Office of the Secretary, U. S. Department of the Treasury

Coulter, James B., Assistant Commissioner, Environmental Health Services, State of Maryland

Cushman, Ralph E., National Aeronautics and Space Administration

Dripps, William H., Superintendent, Inspection Division, Department of Licenses and Inspections, District of Columbia

Eastman, William H., Regional Director, Public Buildings Service, Region 3, General Services Administration

Edelman, Sidney, Chief, Environmental Health Branch, Public Health Division, Office of General Counsel, U. S. Public Health Service

Fairchild, Dr. Edward J., Toxocologist, Criteria and Standards Development Program, National Center for Air Pollution Control, U. S. Public Health Service

Fanfani, John, Assistant Clerk of the Works, Washington Cathedral

Feller, Dr. Robert L., Director, National Gallery of Art Research Project at Mellon Institute of Carnegie-Mellon University, Pittsburgh, Pennsylvania

Flanagan, Joseph E., Jr., Chief, Federal Facilities Section, Abatement Program, U. S. Public Health Service

Friedel, Honorable Samuel N., U. S. Representative, State of Maryland

George, Ralph, Chief, Fuels and Power Plan Section, Los Angeles County Air Pollution Control District

Gillman, Joseph L., Consulting Engineer

Godsey, W. W., Chief, Vehicle Control Division, Department of Motor Vehicles, District of Columbia

Godwin, Honorable Mills E., Jr., Governor of Virginia

Goetz, M. Bernard, Assistant Chief, Plants Division, National Bureau of Standards, U. S. Department of Commerce

Golightly, Honorable William D., City Manager, City of Fairfax, Virginia

Goodwin, Donald R., Chief, Operations Section, Field Operations Activity, Abatement Program, National Center for Air Pollution Control, U. S. Public Health Service

Grant, Dr. Murray, Director of Public Health, Department of Public Health, District of Columbia

Gude, Honorable Gilbert, U. S. Representative, State of Maryland

Hamilton, Reverend Michael, Washington Cathedral

Harris, Robert L., Jr., Assistant Chief for Field Operations, Abatement Program, National Center for Air Pollution Control, U. S. Public Health Service

Heggestad, Dr. H. E., Agricultural Research Service, U. S. Department of Agriculture

High, M. Dean, Engineering Assistant to the Associate Director for Abatement and Control, National Center for Air Pollution Control, U. S. Public Health Service

Hindawi, Dr. Ibrahim J., Plant Pathologist, Field Investigations Section, Abatement Program, U. S. Public Health Service

Huddleston, E. G., Jr., Director, Division of Property Management, Office of General Services, Office of Assistant Secretary for Administration, U. S. Department of Health, Education, and Welfare

Huey, Norma A., Acting Chief, Effects Section, Abatement Program, National Center for Air Pollution Control, U. S. Public Health Service

Hughes, Dorsey F., Senior Vice President, Potomac Electric Power Company

Humphrey, Paul, Chief, Meteorology Section, Abatement Program, National Center for Air Pollution Control, U. S. Public Health Service

Johnson, Augustus C., Chairman, Greater Washington Citizens for Clean Air

Johnson, William F., Advisor to the Associate Director for Abatement and Control, National Center for Air Pollution Control, U. S. Public Health Service

Kailin, Dr. Eloise, Assistant Professor of Medicine, Howard University Medical School, and Fellow, American Academy of Allergy, Medical Society of the District of Columbia

Karant, Max, Senior Vice President, Aircraft Owners and Pilots Association

Katz, Dr. Sol, Professor of Medicine, Georgetown University School of Medicine, and Chief, Medical Service, Veterans Administration Hospital, Washington, D. C.

Kay, Julian O., Ernst & Ernst

Koch, Rhinehart, Senior Engineer, Montgomery County Health Department

Koontz, John W., Public Health Engineer, Prince Georges County Health Department

Lagarias, John S., President, Resources Research, Inc., Member, Technical Advisory Committee, State of Virginia

Lapedes, Honorable Julian, Senator, Maryland Legislature

Lentz, John J., Director, Environmental Health, Metropolitan Washington Council of Governments

Lewis, Melvin E., Washington Metropolitan Area Transit Commission

Limoncelli, Mrs. Doris

Logan, Charles A., Superintendent, Agricultural Research Center, U. S. Department of Agriculture

Machen, Honorable Hervey G., U. S. Representative, State of Maryland

Mackintosh, Sandra Lynn, Legal Procedures Section, Abatement Program, U. S. Public Health Service

Maloney, M. Frank, Staff Engineer, National Zoological Park, Smithsonian Institution

Massey, Honorable Carlton C., County Executive, Fairfax County, Virginia

McGinnity, John L., Chief, Process and Control Engineering Unit, Field Investigations Section, National Center for Air Pollution Control, U. S. Public Health Service

McMurran, Lewis A., Chairman, Virginia State Air Pollution Control Board

Menke, Eric F., American Society of Landscape Architects

Megonnell, William H., Chief, Abatement Program, National Center for Air Pollution Control, U. S. Public Health Service

Meyer, Colonel Alvin, Chairman, Environmental Pollution Control Committee, U. S. Department of Defense

Michelson, Irving, Director, Environmental Health and Safety Research Associates

Middleton, Dr. John, Director, National Center for Air Pollution Control, U. S. Public Health Service

Mills, Kenneth, Acting Chief, Motor Vehicle Compliance Section, Abatement Program, National Center for Air Pollution Control, U. S. Public Health Service

Minor, John, Technical Manager, Region 3, General Services Administration

Moody, Joseph E., American Association of Railroads

Mullan, Joseph W., National Coal Association

Neligan, Robert E., Chief, Laboratory Section, Abatement Program, National Center for Air Pollution Control, U.S. Public Health Service

Nye, Bert L., Director of Research, Washington Gas Light Company

Orndorff, Roy L., Director, Department of Sanitary Engineering, District of Columbia

Passes, Dr. Harold I., Assistant Clinical Professor of Medicine, George Washington University School of Medicine, Member of the Board of Directors, Montgomery County Tuberculosis and Respiratory Disease Association, and the District of Columbia Thoracic Society

Peeples, William J., Commissioner, Maryland State Department of Health

Pfanstiehl, Cody, Director of Community Services, Washington Metropolitan Transit Authority

Phillips, David, Regional Administrator, Region 3, General Services Administration

Poole, Frazer, Preservation Officer, Library of Congress

Ray, Dr. Edward S., Chief, Pulmonary Section, Medical College of Virginia, and President, Virginia Tuberculosis and Respiratory Disease Association

Reamy, William C., American Society of Heating, Refrigeration, and Air Conditioning Engineers

Rhea, Colonel Frank B., District Engineer, Corps of Engineers, Department of the Army, Baltimore, Maryland

Sallee, G. P., Development Engineer, Power Plant and Noise Technology, American Airlines; Aerospace Industries Association of America, Air Transport Association of America

Savage, Alfred E., Vice President, Maintenance and Equipment, D. C. Transit System, Inc.

Scheiber, Walter A., Executive Director, Metropolitan Washington Council of Governments

Scollon, T. Reed, Chief, Division of Bituminous Coal, Bureau of Mines, U. S. Department of Interior

Shackleton, Polly, First Lady's Committee for a Beautiful Capital

Shepherd, Philip O., Jr., Building Inspections Director, Arlington County, Virginia

Slater, Herschel H., Meteorologist, Field Investigations Section, Abatement Program, National Center for Air Pollution Control, U. S. Public Health Service

Sliff, Richard S., Deputy Director, Flight Standards Service, Federal Aviation Agency, U. S. Department of Transportation

Snyder, Robert E., Assistant to the Executive Secretary, Prince William County, Virginia

Swicord, Donald, Chairman, Crescent Residents Association of Reston, Virginia

Thot, John M., Captain, Traffic Division, Metropolitan Police Department

Vaughan, Richard D., Chief, Solid Wastes Program, National Center for Urban and Industrial Health, U. S. Public Health Service

Viehoever, Dr. Arno, Biochemist, Microbiologist and Bioengineer

Walker, Henrietta, Counselor, Prince Georges County Maryland Junior High Schools

Washington, Honorable Walter E., Mayor-Commissioner, District of Columbia

Walsh, Robert T., Special Project Officer, New York-New Jersey Air Pollution Study Project, National Center for Air Pollution Control, U. S. Public Health Service

Windsor, James M., Oil Heat Institute of Greater Washington

Wineland, Honorable Fred L., Senator, Maryland Legislature

Wolfe, Richard C., Vice President, Columbia Gas Pipe Line Company

Yeck, Dr. Robert G., Agricultural Research Center, U. S. Department of Agriculture

Zimmerman, Honorable Eugene W., Vice Mayor, Alexandria, Virginia

RECOMMENDATION I
INTERSTATE AIR POLLUTION CONTROL

It is found that:

1. The National Capital metropolitan area has a common air mass; any pollutants discharged into that air mass, from whatever sources, cause or contribute to air pollution that is carried indiscriminately throughout the interstate area subject only to the vagaries of wind and weather.
2. Such interstate air pollution adversely affects the welfare, and constitutes a potential danger to health, of persons in the area.
3. Although inadequate action has been taken toward abatement of interstate air pollution in the National Capital metropolitan area, some agencies in the area have taken commendable action to cope with the problem within their individual jurisdictions. The Metropolitan Washington Council of Governments has served to stimulate and coordinate State and local air pollution control activities. The District of Columbia and major local governments of Maryland and Virginia within the National Capital metropolitan area are participating members in the Council of Governments. The District of Columbia, Maryland and Virginia propose that the consultative, advisory, planning and coordinating services of the Council continue to function within the scope of the recommendations of this Conference.

Therefore, it is recommended that:

1. A mechanism be established with all reasonable speed to coordinate the development of a comprehensive air quality control plan, to prepare emergency procedures to avert immiment and substantial danger to the public health from air pollution, and to promote uniform air pollution control regulations and enforcement in the National Capital metropolitan area.
2. All existing air pollution control agencies in the National Capital metropolitan area cooperate in early establishment and enforcement of uniform air pollution control regulations and, pending creation of an appropriate interstate regional mechanism, the District of Columbia and the States of Virginia and Maryland designate the appropriate agencies responsible for enforcement of such uniform air pollution standards and regulations.
3. The Interstate Air Pollution Abatement Conference, National Capital metropolitan area, remain in continuing session, subject to call of the Presiding Officer or his designated representative, until an interstate air pollution control mechanism is established, staffed and effectively operational.
4. The air pollution control agencies of the States of Maryland and Virginia and of the District of Columbia report in writing to the Presiding Officer by July 1, 1968, and annually thereafter, progress within their jurisdictions toward meeting all of the recommendations of the Conference.

RECOMMENDATION II
COMBUSTION OF FUELS AT STATIONARY SOURCES

It is found that:

1. The burning of bituminous coal and residual fuel oil generates 95 per cent of the sulfur oxides and 45 per cent of the particulate air pollution in the National Capital metropolitan area.

2. Combined effects of sulfur oxides and particulate air pollution are more detrimental to health and welfare than is the effect of either pollutant by itself.

3. Particulate control technology is available to prevent excessive particulate discharges.

4. Technology for economically practicable desulfurization of combustion gases is in the early stages of full-scale commercial application in the United States.

5. The Oil Heat Institute of Greater Washington has announced its ability and intention to reduce in step-wise increments, at little increase in cost, the sulfur content of residual oil to a maximum of one per cent by July 1, 1969; other available data indicate that residual oil can be desulfurized to 0.3 per cent sulfur, or less, by weight.

6. Reserves of low-sulfur coal in the Appalachian area are 75 billion tons; such coal could be made available in two to three years at a premium price, if long-term purchase contracts are negotiated.

7. Washington Gas Light Company and its pipeline suppliers expressed confidence that they will be able to meet any forseeable increased demands for natural gas in the National Capital metropolitan area at rates competitive with other low-sulfur fuels.

8. A widely accepted criterion for protection of health and welfare

is 0.1 part per million sulfur oxides (as sulfur dioxide) 24-hour average, not to be exceeded more than one per cent of the time annually.

9. If present consumption and fuel-use patterns are maintained, but the sulfur content of all bituminous coal and residual oil is reduced to one per cent maximum, meteorological modeling and air quality studies indiciate that the above sulfur-oxide quality criterion will be attained in the National Capital metropolitan area.

10. Fuel use will increase greatly in the future, as population and energy demands of the area increase; thus, in the future, more stringent control of sulfur oxides will be required.

Therefore, it is recommended that:

1. No fuel oil containing more than 1.5 per cent sulfur by weight be sold or burned in the National Capital metropolitan area after July 1, 1960, and no fuel oil containing more than one per cent sulfur by weight be sold or burned in the area after July 1, 1969.

2. Sulfur content of coal burned in the National Capital metropolitan area be reduced to the lowest practicable level as rapidly as possible and, after July 1, 1969, no coal with a sulfur content of more than one per cent be burned; or in lieu of burning low-sulfur coal, any source may elect to proceed as rapidly as possible to install a combustion-gas desulfurization system, which will result in sulfur-oxide emissions no greater than would the burning of one per cent sulfur coal, in accordance with the following schedule:

2a. No later than three months after issuance of these recommendations, the source notify its respective State air pollution control agency of the selection for large-scale trial of a process for reducing sulfur-oxide emission below that resulting from the burning of coal with

one per cent sulfur, without creating a secondary problem of solid or liquid waste disposal;

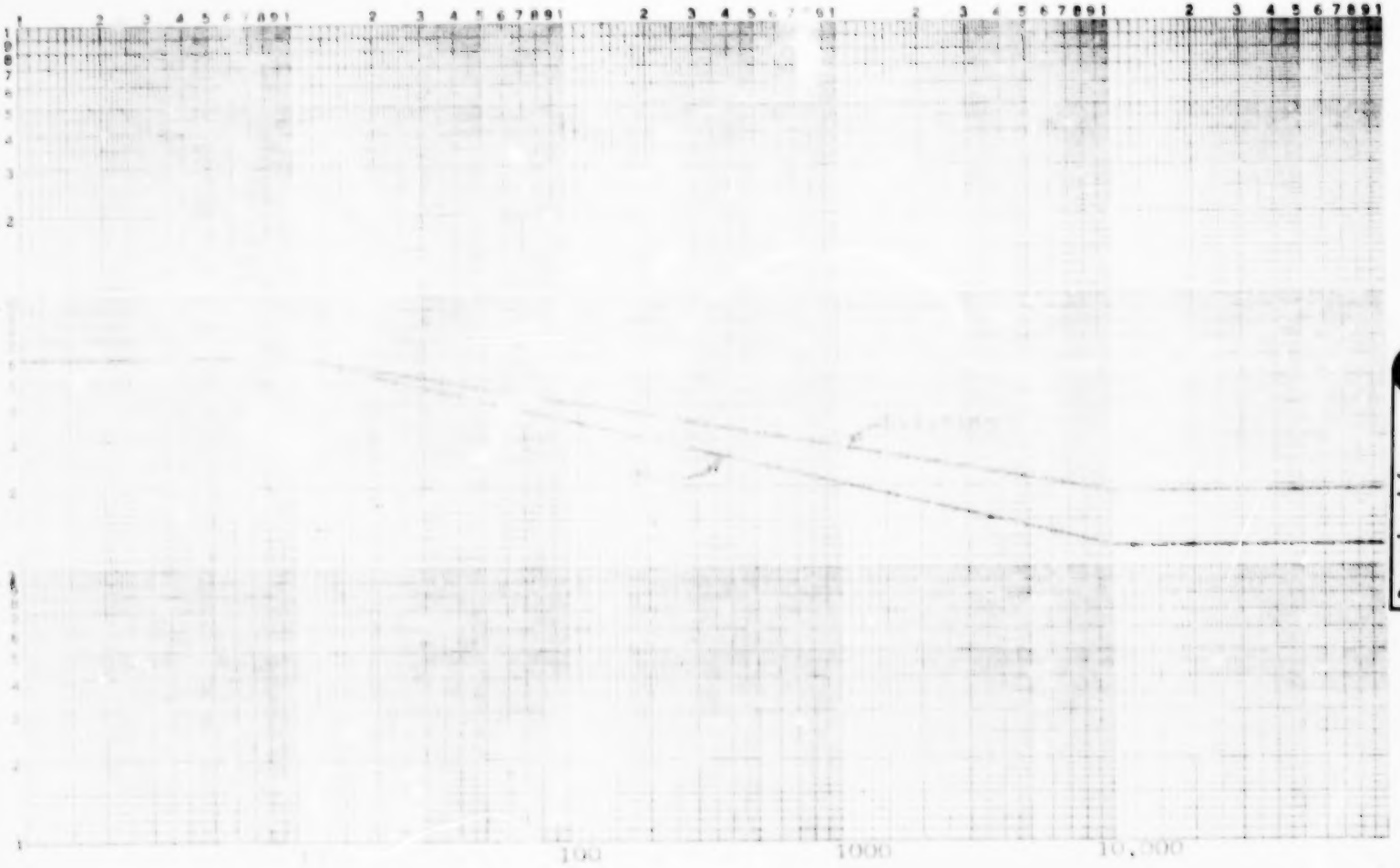
b. Six months after issuance of these recommendations, submit to its respective State air pollution control agency final plans for construction of a desulfurizing unit large enough to treat a significant portion of the gases emitted from the source, and on or before April 1, 1969, place such a desulfurizing unit in operation;

c. On or before July 1, 1970, submit to its respective air pollution control agency a plan for desulfurizing all stack gases from the source, and;

d. On or before July 1, 1973, install and operate process equipment to desulfurize all stack gases from the source.

3. Emissions of particulate matter from all fuel-burning operations be limited in accordance with Figure 1.

MAXIMUM EMISSION OF PARTICULATE MATTER
FROM FUEL BURNING INSTALLATIONS



TOTAL [illegible] - MILLIONS OF BTU PER HOUR

Figure - 1

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RECOMMENDATION III
SOLID WASTE DISPOSAL AIR SALVAGE OPERATIONS

It is found that:

1. Conduct of salvage operations by open burning and disposal of solid wastes by open burning and incineration account for 23 per cent of the total particulate emissions in the National Capital metropolitan area.

2. Technology is adequate to prevent air pollution from solid waste disposal and salvage operations.

Therefore, it is recommended that:

1. All open burning of combustible solid wastes in the National Capital metropolitan area be discontinued not later than 12 months from the date of issuance of these recommendations.

2. Solid wastes be disposed of by acceptable sanitary landfill practices or in incinerators with the following particulate emission limitations:

   a. For incinerators burning 200 pounds per hour or less, 0.3 grains per standard cubic foot of dry flue gas, corrected to 12 per cent carbon dioxide;

   b. For incinerators burning more than 200 pounds per hour, 0.2 grains per standard cubic foot of dry flue gas corrected to 12 per cent carbon dioxide.

3. Cooperative investigations and studies be conducted by the Metropolitan Washington Council of Governments and a report be submitted to the conference participants, within 12 months after

issuance of these recommendations, regarding the most effective, efficient and economical methods for long-range, pollution-free solutions to the regional solid waste problem in the entire National Capital metropolitan area.

RECOMMENDATION IV
CONTROL OF VISIBLE EMISSIONS

It is found that:

1. Visible pollution is discharged to the atmosphere of the National Capital metropolitan area from the burning of fuels and solid wastes and from industrial processes and motor vehicles.

2. Visible particulates of extremely small size remain airborne for long periods, are transported across State boundaries, and impair visibility and general health and welfare.

Therefore, it is recommended that:

1. No later than December 31, 1968, visible discharges to the atmosphere from any new stationary sources, not exceed a density of 20 per cent opacity, such opacity being that which obscures an observer's view to a degree equal to an emission designated as No. 1 on the Ringelmann Smoke Chart or the Public Health Service Smoke Inspection Guide.

2. Existing sources of air pollution meet the foregoing standard for new sources, except that until December 31, 1972, discharges not exceeding 60 percent opacity (No. 3 on the Ringlemann Smoke Chart) be permitted for 4 minutes in any 60 minute period and for an aggregate of 40 minutes in any 24-hour period.

RECOMMENDATION V
CONTROL OF PROCESS EMISSIONS

It is found that:

1. Particulate emissions from industrial processing sources contribute to the accumulation of atmospheric pollutants in the National Capital metropolitan area.

2. Technological means are available for eliminating or reducing such emissions.

Therefore, it is recommended that:

1. No later than December 31, 1968, discharges into the atmosphere from any process source in the National Capital metropolitan area not exceed the limitations set forth in Table I.

TABLE I

Process Wt/hr(lbs)	Maximum Weight Disch/hr(lbs)	Process Wt/hr(lbs)	Maximum Weight Disch/hr(lbs)
50	.24	3400	5.44
100	.46	3500	5.52
150	.66	3600	5.61
200	.85	3700	5.69
250	1.03	3800	5.77
300	1.20	3900	5.85
350	1.35	4000	5.93
400	1.50	4100	6.01
450	1.63	4200	6.08
500	1.77	4300	6.15
550	1.89	4400	6.22
600	2.01	4500	6.30
650	2.12	4600	6.37
700	2.24	4700	6.45
750	2.34	4800	6.52
800	2.43	4900	6.60
850	2.53	5000	6.67
900	2.62	5500	7.03
950	2.72	6000	7.37
1000	2.80	6500	7.71
1100	2.97	7000	8.05
1200	3.12	7500	8.39
1300	3.26	8000	8.71
1400	3.40	8500	9.03
1500	3.54	9000	9.36
1600	3.66	9500	9.67
1700	3.79	10000	10.0
1800	3.91	11000	10.63
1900	4.03	12000	11.28
2000	4.14	13000	11.89
2100	4.24	14000	12.50
2200	4.34	15000	13.13
2300	4.44	16000	13.74
2400	4.55	17000	14.36
2500	4.64	18000	14.97
2600	4.74	19000	15.58
2700	4.84	20000	16.19
2800	4.92	30000	22.22
2900	5.02	40000	28.3
3000	5.10	50000	34.3
3100	5.18	60000 or more	40.0
3200	5.27		
3300	5.36		

RECOMMENDATION VI
MOTOR VEHICLES

It is found that:

1. Eighty per cent by weight of the total air pollutants discharged in the National Capital metropolitan area result from the operation of motor vehicles.

2. Emissions from motor vehicles contribute to photochemical smog throughout the entire National Capital metropolitan area.

3. Federal regulations require emission controls for new automobiles and light trucks, beginning with 1968 models, but they do not provide for control of older vehicles or for maintenance of control systems after sale of vehicles.

Therefore, it is recommended that:

1. Smoke emissions from motor vehicles (gasoline and diesel powered) not exceed Ringlemann #1, and within one year of the effective date of these recommendations, those vehicles equipped with air pollution control measures be inspected annually to observe that such control measures are in good mechanical condition.

2. Vehicle inspection programs of the District of Columbia and the State of Virginia be modified, and the State of Maryland vehicle inspection program be extended, to include emission measurements as soon as practicable techniques become available.

3. State and local agencies continue to monitor atmospheric levels of pollution throughout the National Capital metropolitan area and advise the Secretary of Health, Education, and Welfare of any apparent need for more stringent control of new motor vehicle emissions.

RECOMMENDATION VII
CONTROL OF DIESEL BUS EMISSIONS

It is found that:

1. Evidence is inadequate to establish interstate transport of diesel exhaust emissions, per se, but diesel-powered vehicles move interstate and their emissions contribute to health and nuisance problems.

2. It is technologically feasible to reduce noxious exhaust emissions from diesel engines.

Therefore, it is recommended that:

1. No later than six months after issuance of these recommendations, all buses equipped with 2-stroke diesel engines and regularly operated in the National Capital metropolitan area be fueled by No. 1 Diesel Oil.

2. The District of Columbia and the States of Maryland and Virginia, utilizing the Metropolitan Washington Area Transit Commission to the extent feasible, investigate and report in writing to the Presiding Officer of this conference by November 1, 1968, and at six-month intervals thereafter:

a. The feasibility of vertical exhaust systems for transit coaches;

b. Development of inspection systems for black smoke in diesel bus exhaust under full-rack conditions while engines are hot;

c. The relative objectionability of two-stroke and four-stroke diesel engines, from the standpoint of smoke and odor; and

d. The progress made by operators of buses equipped with two-stroke diesel engines in complying with the first recommendation above.

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